

I CLAIM:

1. An apparatus for creating a substantially uniform temperature across a sheet of plastic prior to delivery of the sheet to an appliance liner thermoforming device comprising:
 - a fluid medium having an associated temperature;
 - a conveying mechanism for transporting a plastic sheet into a position wherein the fluid medium is placed in contact with opposing surface portions of the plastic sheet; and
 - at least one temperature control unit for regulating the temperature of the fluid medium such that the plastic sheet is brought to a substantially uniform temperature prior to delivery to the appliance liner thermoforming device.
2. The apparatus according to claim 1, wherein the substantially uniform temperature constitutes a temperature differential across the entire sheet of less than 5°F.
3. The apparatus according to claim 1, wherein the at least one temperature control unit is adapted to heat the fluid medium to approximately 130°-140°F.
4. The apparatus according to claim 1, further comprising:
 - an enclosure including a longitudinally extending through passage, said conveying mechanism transporting the sheet through the enclosure;
 - a manifold assembly including first and second manifold sections adapted to face opposing surface portions of a sheet transported through the enclosure; and

at least one blower for developing a flow of air, which constitutes the fluid medium, into the first and second manifold sections, with the air to be distributed to flow upon the opposing surface portions.

5. The apparatus according to claim 4, wherein each of the first and second manifold sections includes a plurality of spaced nozzles directed toward the opposing surface portions, with the flow of air from the at least one blower being directed through the nozzles to impinge upon the opposing surface portions.

6. The apparatus according to claim 5, wherein the nozzles extend transversely across and are longitudinally spaced within the passage.

7. The apparatus according to claim 5, wherein the plurality of nozzles are spaced approximately 76mm (3 inches) from a sheet transported through the passage.

8. The apparatus according to claim 4, wherein the manifold assembly further includes recirculation ducting fluidly connecting the passage with an inlet of the at least one blower.

9. The apparatus according to claim 8, wherein the at least one blower includes first and second blowers, with the first blower directing air into the first manifold section and the second blower directing air into the second manifold section.

10. The apparatus according to claim 9, wherein each of the first and second blowers develops an air flow rate of approximately 15,000 CFM.

11. The apparatus according to claim 4, wherein the passage is adapted to receive a sheet having a thickness in the order of 5mm (.20 inches) to form an appliance liner having a depth of approximately 61cm (2 feet).
12. The apparatus according to claim 4, wherein the apparatus has an operating static pressure in the range of 0.7-0.9 in. H₂O.
13. The apparatus according to claim 4, further comprising, in combination: a system controller for regulating at least one of the blower and the temperature control unit based on sensed operating parameters of said apparatus.
14. The apparatus according to claim 4, wherein the at least one blower constitutes a variable speed blower, with said temperature control unit regulating an operating speed of the variable speed blower.
15. The apparatus according to claim 4, further comprising: a damper unit for introducing a desired amount of ambient air into said manifold assembly.
16. A method of forming an appliance liner comprising:
 - extruding a sheet from a plastic material;
 - arranging the sheet in a stack of similarly extruded sheets wherein the sheet is permitted to cool;
 - transferring the sheet to a temperature control unit;
 - directing a temperature controlled fluid medium onto opposing side surfaces of the sheet within the temperature control unit to establish a substantially uniform temperature across the sheet; and

delivering the sheet to a thermoforming device for creating the appliance liner.

17. The method according to claim 16, further comprising: creating the substantially uniform temperature by impinging the fluid medium to a temperature differential across the entire sheet of less than 5°F.

18. The method according to claim 16, further comprising:
delivering the fluid medium through a manifold assembly unto the opposing side surfaces of the sheet; and
recirculating the fluid medium through the manifold assembly.

19. The method according to claim 16, further comprising: developing a flow of air as the fluid medium through the use of first and second blowers, with each of the first and second blowers developing an air flow rate of approximately 15,000 CFM.

20. The method according to claim 16, further comprising: operating the temperature control unit at a static pressure in the range of 0.7-0.9 in. H₂O.

21. The method according to claim 16, further comprising:
extruding the sheet at a thickness of approximately 5mm (.20 inches); and
creating an appliance liner with a depth of approximately 61 cm (2 feet).

22. The method according to claim 16, further comprising: directing the air onto the opposing side surfaces of the sheet from nozzles spaced approximately 76mm (3 inches) from the opposing side surfaces.

23. The method according to claim 16, further comprising:
sensing operating parameters of the temperature control unit; and
regulating the temperature control unit based on the sensed operating parameters.

24. The method according to claim 23, further comprising: heating the sheet to a temperature of approximately 130° - 140°F.

25. The method according to claim 16, further comprising:
utilizing air, supplied by a blower unit, as the fluid medium; and
controlling an amount of heat added to the air by the blower unit by varying an operating speed of the blower unit.

26. The method according to claim 16, further comprising:
developing a flow of air as the fluid medium through the use of at least one blower which directs the flow of air into a manifold assembly;
and
regulating the position of a damper unit to control an introduced amount of ambient air into the manifold assembly.